

Appl. No. 10/652,506

Docket No. 10828-11102

REMARKS

This re-numbered listing of claims is submitted pursuant to a request from the Examiner after a telephone call on February 3, 2006. Re-numbered claims 1 – 19 are pending in the present application. No new claims have been added.

The application was originally filed with claims 1 – 19. However, claim 4 was skipped. As such, a notation was made in the listing of claims at claim 4 noting “number skipped in original filing of patent application and in publication.” In an amendment on May 10, 2005, new claim 20 was added.

On May 10, 2005, the Examiner made a clerical amendment, renumbering the claims from 1 –20 to 1 –19. However, in the Office Action of July 26, 2005, the Examiner rejected claims 1 – 20. Accordingly, in the responsive RCE dated January 26, 2006, Applicants felt obligated to list claims 1-20 in the listing of claims, wherein claim 4 continues to include the notation indicating "number skipped in original filing of patent application and in publication."

However, pursuant to the Examiner's request, Applicant's are herein submitting a re-numbered listing of claims pursuant to 37 CFR 1.126 consistent to the clerical amendment on May 10, 2005.

A copy of the clerical amendment is provided in Exhibit A. In the preliminary amendment, the claims have been re-numbered to 1-19. No claims have been amended. No claims have been deleted. No new claims have been added.

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CONCLUSION


Applicants have made an earnest and *bona fide* effort to clarify the issues before the Examiner and to place this case in condition for allowance. Reconsideration and allowance of all of claims 1-19 is believed to be in order, and a timely Notice of Allowance to this effect is respectfully requested.

No fee is believed due with the submission of this paper. However, if the Applicant is mistaken, the Commissioner is hereby authorized to charge any required fees from Deposit Account No. 502811, Deposit Account Name BROWN RAYSMAN MILLSTEIN FELDER & STEINER.

Should the Examiner have any questions concerning the foregoing, the Examiner is invited to telephone the undersigned attorney at (310) 712-8300. The undersigned attorney can normally be reached Monday through Friday from about 9:00 AM to 6:00 PM Pacific Time.

Respectfully submitted,

Date: February 3, 2006

  
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# Exhibit A

5/10/05  
revised  
by ExaminerAmendments to the Claims

Please amend claims 1, 8, 13, 15, 16, and 18 and add new claim 20 as follows:

1. (CURRENTLY AMENDED) A mass flow controller, comprising:

a body portion having a first internal passage and at least a second internal passage formed therein;

a flow control valve coupled to the body portion and in communication with the first and second internal passages;

at least one pressure transducer coupled to the body portion and in communication with at least one of the first internal passage and the second internal passage and second internal passages;

a nonlinear flow restrictor coupled to the second internal passage and configured to produce a high highly compressible laminar flow therethrough coupled to the second internal passage;

a thermal sensor in communication with at least one of the first internal passage, the second internal passage, and the flow restrictor; and

an exhaust vessel in communication with the flow restrictor.

2. (ORIGINAL) The device of claim 1 wherein the second internal passage is configured to flow a fluid at a pressure greater than a pressure at an output of the flow restrictor

3. (ORIGINAL) The device of claim 1 wherein exhaust vessel is under vacuum.

Rule 1.126 4. (ORIGINAL) The device of claim 1 wherein exhaust vessel is under near vacuum

5. (ORIGINAL) The device of claim 1 wherein exhaust vessel is under pressure drop of about 0 psia to about 5 psia.

6. (ORIGINAL) The device of claim 1 wherein the flow restrictor is manufactured from a compressed and sintered material.

7. (CURRENTLY AMENDED) The device of claim 1 wherein the flow restrictor is porous.
8. (ORIGINAL) The device of claim 1 wherein the flow restrictor comprises a coiled capillary tube.
9. (ORIGINAL) The device of claim 1 wherein the flow restrictor is positioned downstream of the flow control valve.
10. (ORIGINAL) The device of claim 1 wherein the flow restrictor is configured to enable a pressure drop between a flow restrictor inlet and a flow restrictor outlet of a highly compressible laminar flow of at least 50 percent.
11. (ORIGINAL) The device of claim 1 further comprising at least one pressure transducer in communication with an outlet of the flow restrictor.
12. (CURRENTLY AMENDED) A mass flow controller, comprising:  
~~one or more pressure sensors;~~  
~~an upstream a flow control valve;~~  
a pressure transducer positioned downstream of the flow control valve; and  
a nonlinear restrictor with an inlet and an outlet and positioned downstream of the valve  
~~and the pressure sensor and configured to have a more an incremental pressure per unit of flow at~~  
~~an inlet of the restrictor the inlet~~ at low flows.
13. (ORIGINAL) The device of claim 13 wherein the restrictor comprises a laminar flow element configured to produce a highly compressible laminar flow therethrough.
14. (CURRENTLY AMENDED) The device of claim 13, wherein the restrictor is configured to provide a pressure drop between ~~a restrictor the~~ inlet and ~~a restrictor the~~ outlet of at least about 50% ~~of the pressure at an inlet of the flow restrictor.~~

16. (CURRENTLY AMENDED) The device of claim 13 wherein the restrictor ~~is~~ comprises a an elongated capillary body having a small hydraulic diameter.

17. (ORIGINAL) The device of claim 13 wherein the restrictor comprises a sintered body.

18. (CURRENTLY AMENDED) The device of claim 13 wherein the restrictor comprises a porous body having pores formed in parallel and series ~~formed~~ thereon.

19. (ORIGINAL) The device of claim 13 wherein the restrictor is formed in a variety of configurations selected from the group consisting of capillary tubes, annular gaps, annular plates, parallel plates, grooved plates, stacked plates, coiled capillary bodies, and coiled sheets.

20. (NEW) The device of claim 14 wherein the restrictor is configured to enable a pressure drop between the inlet and the outlet of a highly compressible laminar flow of at least 50 percent.